ORIGINAL ARTICLE

IMPORTANCE OF ECONOMIC EVALUATION IN HEALTH CARE DECISION MAKING

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ABSTRACT

Introduction : Economic evaluations can provide "value-for money" information to those making decisions about the allocation of limited health care resources. In particular, economic evaluations can be used to identify interventions that are worth providing and those that are not. Furthermore, evaluations can be used with other approaches to help set priorities, such as program-budgeting marginal-analysis.

Methodology : Compile and systematically describe from the publications, articles and reports on economic evaluation in healthcare decision making .

Result : A high quality economic evaluation should provide decision makers with information that is useful, relevant, and timely. In addition, evaluations should be based on rigorous analytical methods, be balanced and impartial (credible), and be transparent and accessible to the reader. There are many situations where economic evaluations can assist decision makers: decisions by various levels of government or administrative bodies (e.g., regional health authorities, hospitals, drug plans) to fund a program, service or technology, pricing decisions by government regulators and technology manufacturers, clinical practice guidelines, priorities for research funding by governments and research-based firms, post-marketing surveillance and updates of economic information based on the use of the technology in the "real world" (which can then be used to inform one of the other types of decisions).

Discussion and Conclusion : This requires that decision makers take a broad view of the impact of a technology, and decision that are more explicit and transparent. The ultimate test of an evaluation is whether it leads to better decision in the presence of uncertainty, and results in the more efficient and effective use of resources.

Keyword : economic evaluation, decision making,goverment

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INTRODUCTION

Economic considerations have assumed an increasingly prominent role in the planning, decision making, management and evaluation of health systems, ranging from the design of ways to pay providers or to improve access to care for households, to the definition of essential packages for insurance, to decisions about whether or not to include new medicines on hospital, state or national formularies.

Increased attention to issues of cost and efficiency have been prompted by the pervasive scarcity of resources relative to health needs and demands, driven by factors such as the HIV pandemic, ageing populations, the development of innovative but often expensive technologies and also by the heightened knowledge and expectations of healthcare consumers[1]. These classical forces of supply and demand on the market for healthcare have given rise to the need for sophisticated methods of quantitative analysis, including modeling of disease processes and outcomes, econometric modeling for population-based resource allocation exercises, macro-level modeling of the impact of (ill-) health on wealth (and vice versa), and multi-state decision analytic models that assess the technical efficiency of health interventions.

As part of this process, economic evaluation has become a commonly used tool to inform health policy as well as to guide clinical decisions[1]. It establishes the relative costs and impacts of health interventions, with the underlying objective of maximizing population health for the available resources. There are now many thousands of completed evaluations that have identified how and where efficiency improvements could be made. Many are clinical and most focus on ways to address a particular disease or health problem, but a few have considered how the efficiency of the health sector as a whole could be improved[2].

In some countries, the use of cost-effectiveness analysis has been institutionalized for decision making, most commonly to address the question of public subsidies for the purchase of medicines. In other settings, the influence of this accumulated body of economic evidence on decision making and resource allocation is harder to detect. In part, this is due to the fact that it can be difficult to attribute changes in policy or resource allocation to the presence of an economic evidence base when economic evidence is but one of the factors that is typically considered when households, firms or governments make such decisions. However, it is also the case that decision makers find the evidence difficult to interpret and apply because of methodological heterogeneity and inconsistency, which limits the comparability and generalisability of different results. This policy review takes a step back and looks objectively at the role and use of cost-effectiveness analysis at the population level within the broader context of health system financing, commenting in particular on the extent to which it can be used to address key financing challenges.

2.0 Economic Evaluation

2.1Economic Framework

In principle the objective of economics is to maximize social wellbeing or welfare when the resources that are available are limited[3]. The distinctively economic contribution to this task arises from recognition that, when resources are scarce, their use to achieve one objective necessarily prevents their use for some other purpose. This gives rise to the most fundamental and important concept in economics; *vis* the concept of an opportunity cost which is defined as the value of the benefits that are foregone (opportunities lost elsewhere) because of the use of resources to achieve a particular objective. This is shown in Figure 1.

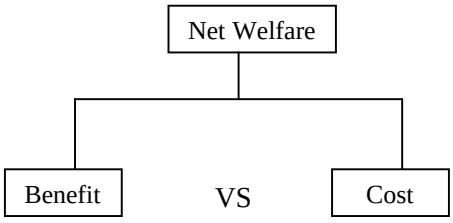

Figure 1 Simplified Economic Framework (adapted from Richardson 1999)

At the level of abstraction embodied in Figure 1 the conclusion that costs and benefits should be compared for maximum wellbeing is a necessary truth as anything which adds or subtracts from wellbeing is included in the framework. Controversy only arises when these broad concepts are operationalised. In the practice of economic evaluation, the first step is to distinguish ethical distributional and other

intangible benefits from those which are more readily measured; *vis*, those that are associated with the use of real resources. In Figure 2 where this distinction is illustrated, narrowly defined economic evaluation is often associated with the left hand side of the figure which deals with 'economic costs and benefits'. In principle, the distinction shown in this figure is artificial. Anything contributing to social welfare could be included in an analysis. In practice, this broad objective is difficult to achieve, firstly, because ethical and intangible considerations are often difficult to quantify but more fundamentally because there is often disagreement about which ethical values should be incorporated in an analysis and, in particular, it is unclear how benefits to different individuals should be combined to determine 'social welfare'. For this reason, good economic evaluation will simply note effects that are relevant to issues of social justice, equity and distribution. This does not always occur in practice. Many economic analyses are concerned with costs and benefits where there are no particular ethical issues – there is 'distributive' neutrality. In the domain of health – where compensation for loss is difficult, impractical or impossible – these issues, however, become of particular significance.

Economics deals with the exchange between people and the trade-offs that they make. In publicly funded health care systems, limited resources mean that every available intervention cannot be provided in every situation for all who need or want it. Choices must be made among effective health care interventions, and the decision to fund one means that others cannot be funded. The opportunity cost of funding the chosen intervention can be seen as the health benefits that could have been derived from funding the next best alternative.

Furthermore, the choice of the best course of action depends on weighing only the "incremental changes" in costs and consequences between the alternatives being compared. Consequently, it is unnecessary to weigh the full range of possible costs and consequences of each alternative.

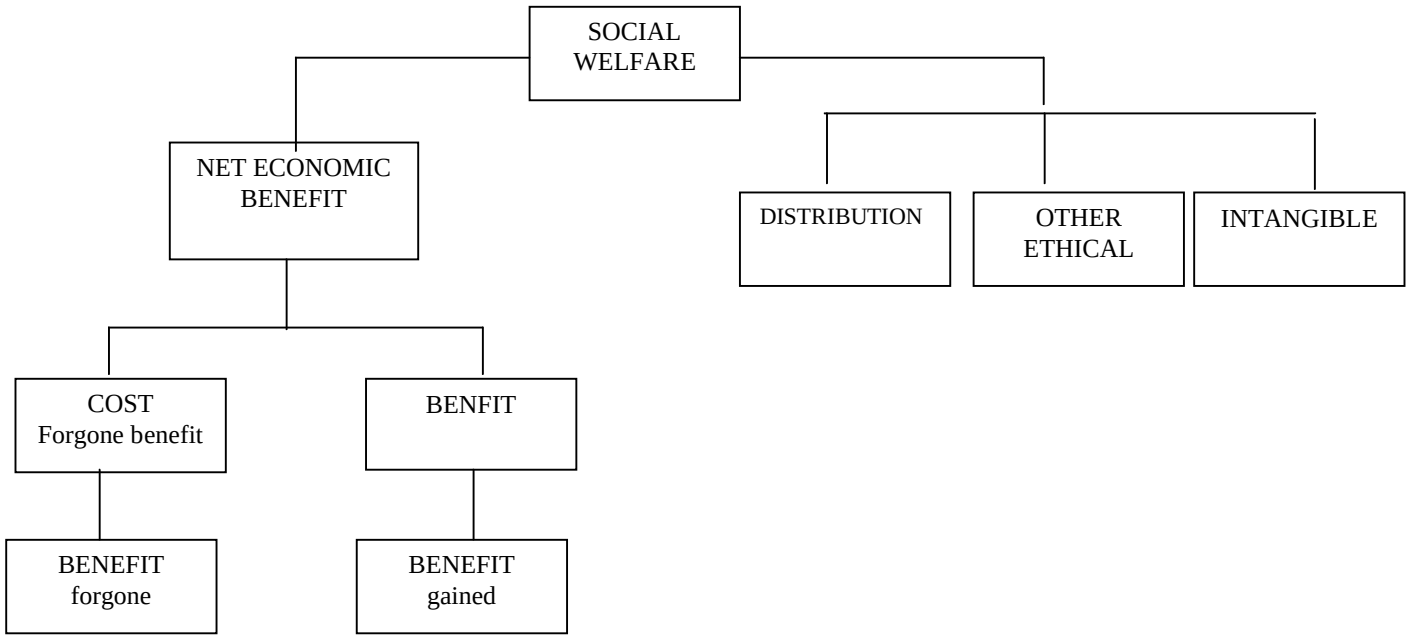

Figure 2 Structure of Economic Evaluation (Adapted from Richardson 1999)

2.2 What is Economic Evaluation?

Simply measuring the costs of an intervention will not tell us whether it is cost effective. A cheap intervention may represent poor value for money if it has little effect on outcome. Economic evaluation is the process of measuring cost effectiveness. An economic evaluation will measure two parameters—cost and outcome (effect). Because two parameters are measured, the results of an economic evaluation will not necessarily tell you which treatment option is "better" in the same way that a clinical trial might. If the cheapest option is also the most effective, it will clearly be the most cost effective. In this situation the most cost effective option is described as being dominant. However, if the cheapest option is not the most effective the decision of which intervention to choose is less clear. In this situation the results will typically take the form of an incremental cost effectiveness ratio, expressed as the additional cost incurred per additional unit of effect accrued. When no intervention is dominant economic evaluation will tell you how much extra you will need to be prepared to pay to achieve an improved outcome. As such, health economics will inform decision making, rather than dictating a decision. The idea that economic evaluation is only about determining which is the cheapest option is a simplistic and mistaken idea. It is also a dangerous one as it risks losing the valuable insights that economics can provide[4].

2.2.1 Opportunity Cost

The concept of opportunity cost is fundamental to economic evaluation. It is based upon the idea that scarcity of resources means that expending resources on one health care activity inevitably means sacrificing activity somewhere else. The opportunity cost of undertaking an activity is defined as the benefits that must be foregone by not allocating resources to the next best activity. For example, you decide to employ a chest pain nurse in your department to achieve National Service Framework targets for thrombolysis. To do this you must make tough choices elsewhere. Perhaps you must do without some clinical assistant sessions? But this will cause overall waiting times to increase. The opportunity cost of employing a chest pain nurse is the benefit you must forego by being unable to fund the next highest option on your list of priorities. If your next highest priority is more clinical assistant sessions, then the cost of foregoing these (an increase in waiting times) will be the opportunity cost of employing a chest pain nurse[5].

2.2.2 Economic Efficiency

We often talk about trying to make the most efficient use of our available resources. Achieving economic efficiency entails obtaining maximum benefit from our given resources. There are two types of economic efficiency—technical efficiency and allocative efficiency.

Technical efficiency simply entails achieving a given objective with the least possible expenditure. If our objective is to reduce A&E waiting times, we could achieve this by employing more medical staff or by training nurse practitioners to assess and treat patients with specific complaints. The most technically efficient option will be that which reduces waiting times at the lowest cost. We are simply concerned with how we meet our specified objective—reducing waiting times.

Allocative efficiency entails deciding what objectives we will attempt to meet and the extent to which we will try to meet them. Determining allocative efficiency entails making a value judgment about the relative merits of different objectives. The example given earlier, where we had to decide whether to allocate resources to employ a chest pain nurse to achieve door to needle time targets for thrombolysis, or employ clinical assistants to reduce overall waiting times, is an example of a decision relating to allocative efficiency. It is not simply a matter of deciding which intervention will best meet our objective, we must decide which objective is most worthwhile meeting. Questions of technical efficiency are unsurprisingly rather easier to answer than those relating to allocative efficiency. Economic evaluation may be used to inform and illuminate issues of allocative efficiency, but because a value judgement is required, decision making will ultimately be up to clinicians, patients, politicians, and health care managers. Health economic data may tell us how much we will need to pay to achieve our objectives—reducing door to needle times and reducing overall waiting times. Health economic data can also tell us what health benefits we might expect from achieving certain targets, such as how many lives will be saved by reducing door to needle time by a specific amount. More controversially, comparisons between interventions, such as those presented in a "marginal cost per QALY league table", can address some of the issues of allocative

efficiency. Ultimately, however, deciding which benefits are worthwhile will entail some sort of value judgement.

2.2.3 The key features of an economic evaluation

An economic evaluation is a comparison of the costs and outcomes of health care interventions[6]. As such it provides a measurement of economic efficiency. To be an economic evaluation a study must have two essential features:

(1) Both costs and outcomes must be analysed, and

(2) More than one alternative strategy must be compared.

It should be clear by now that economic evaluation is not simply a matter of measuring costs of interventions and then choosing the cheapest option. This is clearly foolish and not an approach any of us would take in our lives outside health care. If you wanted to buy a product you wouldn't simply buy the cheapest available regardless of quality, your personal preference, or whether it did what it was supposed to do. Equally, we do not always buy the best product available as we wish to have money left to buy food[7]. Cost is important, but no more important than the outcome from the expenditure. It may ultimately be appropriate to choose on the basis of cost alone, but only if we can show that outcomes are equivalent. Measuring outcome from health care interventions is one of the great challenges of health economics. It is astonishing, considering the amount of money we spend on health care, that our ability to measure benefit from health care is only recently receiving serious attention, and remains relatively crude. We collect reams of data showing how many new patients attend our department, how many investigations we do, and how many treatments we do. Yet is any of this of any benefit to our patients? Just as we would not accept evidence of effectiveness without comparison to a control group, we cannot measure cost effectiveness without some sort of comparison. The choice of comparator may be difficult, because we want to choose the best alternative from the point of view of both costs and benefits. For this reason, if there is no alternative strategy that is of proven effectiveness, the most appropriate comparator may well be a "do nothing" alternative. Doing nothing certainly should not cost much, and, if there is no evidence that the intervention being investigated is effective, will be relatively cost effective

2.3 Timing of evaluations

Economic evaluations can be undertaken at any point in the life cycle of a technology. The timing of a study ultimately depends on the needs of the decision makers. If an evaluation is conducted late in the life cycle, there is a risk that the findings will not be of use to the decision maker, because the funding decision has been made, or the intervention has diffused into clinical practice, though the findings could inform decisions about changes to reimbursement status or the intended target population. If a technology is evaluated early in its life cycle, before evidence on its effectiveness is clear, there is a risk that the uncertainty about the costs and effects would be larger than if it is evaluated later. Often, the effectiveness of technologies depends on the setting, and sometimes on the operator's experience if there is a learning curve associated with it. Performing evaluations is an iterative process[7].

A well conducted evaluation will identify the most important sources of uncertainty, and thereby will direct the gathering of evidence to those areas. This produces more accurate estimates of an intervention in the long term.

3.0 Types of Economic Evaluation

Several types of economic evaluation are recognized. It is the measurement of outcome that determines what type of economic evaluation has been performed.

3.1 Cost Minimization Analysis

If the outcomes of the alternative strategies are demonstrated to be equivalent, then analysis will consist of simply comparing costs and choosing the cheapest option. Demonstration of equivalence of outcome may entail presentation of primary data from the study itself, or presentation of secondary data, such as the results of a meta-analysis. While this sounds simple, cost minimization analyses often conveniently ignore the issue of uncertainty surrounding the estimates of comparative effectiveness. Outcomes are extremely unlikely to be identical. More probably there is no statistically significant difference in outcome. All good clinical trials, and meta-analyses,

should present their results with confidence intervals. These will probably include the possibility of the more costly option also being more effective. Estimating confidence intervals for cost effectiveness data is difficult and well beyond the scope of this article. However, it is always worth examining the confidence intervals for outcome data presented with a cost minimization analysis to see whether the more expensive strategy could still produce a worthwhile improvement in outcome.

3.2 Cost Effectiveness Analysis

For a cost effectiveness analysis, the outcomes of the alternative strategies are not equivalent and are measured in uni-directional natural units, such as lives saved, change in pain score, or change in peak flow rate. The results are therefore helpful in determining technical efficiency. They tell us which strategy maximizes a given objective, such as improving pain score, with the lowest cost. An example of a cost effectiveness analysis might be a randomized controlled trial comparing the costs and effects of two thrombolytic agents for acute myocardial infarction. A suitable primary outcome might be mortality at 30 days. If the cheaper thrombolytic agent were also the most effective, interpretation of the results would be easy and our choice of thrombolytic therapy clear. The cheaper, more effective agent would be dominant. But what do we do if the more expensive agent is also the most effective? If we make our decision on the basis of cost we will choose the cheapest agent, whereas if we make our decision on the basis of effectiveness, we will choose the more expensive agent. The study can help our decision making by presenting results as a cost effectiveness ratio. This tells us how much extra we must pay for each additional life saved and allows us to consider whether alternative uses of the same resources would generate more health benefits. So how much should we be prepared to pay to save a life at 30 days with our more expensive thrombolytic agent? £10 000? £100 000? How about £1 million? This is, of course, a value judgement and depends upon many factors. Again it is worth emphasising that economic evaluation can inform and illuminate the decision making process, but cannot make the decision for us. Deciding whether to fund this expensive thrombolytic agent, it would clearly be useful to be able to compare our cost effectiveness ratio to estimates of cost effectiveness for other competing uses for our resources. Yet many interventions in A&E (or health care in general) will not affect mortality. How do we compare our cost per life saved to the cost per change in pain score of an expensive analgesic agent, or the cost per change in peak flow rate of a treatment for asthma? This is an important limitation of cost effectiveness analysis.

3.3 Cost Utility Analysis

For a cost utility analysis the outcomes of health care interventions are measured in units of health outcome that combine quality and quantity of life, and can thus be compared between different interventions and health problems.The most well known example of a measure of health utility is the quality adjusted life year, or QALY. Calculation of QALYs entails first measuring quality of life on a scale from zero to one, where zero equates to death and one equates to perfect health. The period of time (in years) over which this quality assessment applies is then multiplied by its quality weighting to give the number of quality adjusted life years. Cost utility analysis therefore offers the attractive prospect of allowing comparison of a wide and varied range of health care interventions. This has lead to the development of "marginal cost per QALY league tables", which compare the marginal cost per QALY of interventions as diverse as cholesterol screening and heart transplantation. There are many theoretical, methodological, and ethical concerns with these analyses that are beyond the scope of this article. Well conducted cost utility analyses comparing interventions within the same area of health care can be a powerful way of assisting decision making, but the use of marginal cost per QALY league tables to compare diverse health care interventions is highly controversial[8].

3.4 Cost-Benefit Analysis

Although the expression "cost-benefit" analysis is commonly used for any form of economic analysis, it has a very specific meaning in health economics. It refers to economic analyses in which the outcomes are valued in monetary units. As costs and benefits are both measured in the same units they can be compared directly. This is clearly very useful for assisting decision making. However, measuring benefits in monetary units presents substantial difficulties. While cost-benefit analyses have many theoretical attractions for health economists, they are

unlikely to be frequently encountered in the medical literature.

3.5 Cost Consequence Analysis

This is a form of cost effectiveness analysis. Ideally a cost effectiveness analysis will have a primary outcome that can be used to produce a cost effectiveness ratio. However, often more than one outcome is relevant and it is difficult to determine which is the most important. For example, a trial comparing the cost effectiveness of treatment for sprained ankle might consider ability to weight bear, pain score or several other outcomes to be equally important. Combining several outcomes to create a single index of health utility is one option, but this may be insensitive to important differences in outcome. Another option is to present a cost consequences analysis. All important outcomes are presented with relevant cost effectiveness ratios and the reader is left to judge the relative importance of the outcomes[9]. The limitation of this type of analysis is that it does not allow transparent assessment of whether the health gained from the expenditure of limited resources is being maximised. A decision maker can only be confident of this when one intervention dominates the others on all outcomes and cost.

Table 1 Strengths and limitation economic evaluations

NAME	MEASUREMENT UNIT FOR EFFECTS	STRENGTHS	LIMITATIONS
Cost benefit analysis (CBA)	All effects measured in dollars.	The net benefit (NB) is easy to interpret. For example, a new treatment's extra benefits are worth more than the extra costs when NB > 0.	It is difficult to measure the value of all health outcomes in dollars. There may be moral objections about the impact of ability to pay in the process of valuing the effects.
Cost–utility analysis (CUA)	Two effects (quality and length of life) whose product is taken as quality-adjusted life years (QALYs).	Patient outcomes involving both quality and length of life can be incorporated in the analysis. In theory, the QALY measure is "universal," so that very different programs evaluated with QALYs can be compared.	QALY measures vary by method. QALY measures vary by respondent. Society may value a QALY for different patient groups differently (for example, is a QALY gained for sufferers of erectile dysfunction valued the same as a QALY gained for sufferers of severe mental illness?)
Cost-effectiveness analysis (CEA)	One effect measured in "natural units".	There is one outcome and it is measured in its "natural units."	Only one outcome will represent the effect of treatment; however, other outcomes may be relevant.
Cost-minimization analysis (CMA)	No effects measured.	There is only a need to collect cost data.	Few treatments have identical outcomes. Researchers would likely need to collect the effect data to verify the "equal effect" assumption

Robinson(1993)

4. Economic evaluation studies

4.1 Economic evaluation of two regional palliative care programs for terminally I11 cancer patient

One in three Canadians is diagnosed with cancer at some point in his or her life, and about half of those people die of the disease. A review of the literature reveals there is a lack of large-scale, comparative studies of palliative care innovations — the net result of which is a small evidence base upon which decision makers can rely[6].

The objective of that study was to describe, explain and evaluate the economic consequences of introducing two comprehensive, co-ordinated and integrated palliative care programs in two large urban centers in Alberta, Canada.

In the area of program management, it is important that new services and initiatives — including shared-care models with other healthcare teams — be implemented that further enhance access, co-ordination, quality of care, and appropriate use of resources. Furthermore, resources for residential hospice and homecare should be increased to allow patients to move out of acute care sooner, and decision makers should co-ordinate with the existing community and volunteer resources that already provide end-of-life care for palliative patients.

4.2 Economic evaluation in dentistry

"When alternative therapies are available, patients want the choice of treatment to be based on processes that are cost-effective and have proven outcomes"[10].

It is likely there will be an increased demand for economic analyses of dental interventions by the public and by those funding healthcare and the National Institute for Clinical Excellence (NICE) may play an important role in this area in the future. Both the NHS and private companies are likely to demand increased evidence of value for money in the future. This is particularly important in areas which may be perceived as 'cosmetic'.

Economic evaluation is still used less frequently in dentistry than in medicine. However, this is beginning to change. A recent computerised literature search showed the following; 'Cost effectiveness and dentistry' produced 388 papers published between 1971 and 1999 with 67of those in 1997/98 ;Cost benefit and dentistry' produced a total of 370 papers published between 1971 and 1999 with 66 of those in 1997/98 ;'Cost utility and dentistry' produced only 18 papers, all of which were published between 1980 and 1998 with 5 of those in 1997/98 and cost minimisation and dentistry' produced no papers at all.

It is, however, worth noting that a number of papers were listed under both cost benefit and cost effectiveness. This stresses the importance that papers must be read carefully to determine which method of analysis was actually used. It is also worth noting that a large number of the papers which were listed, had not undertaken any form of economic analysis and merely mentioned that economic evaluation would be a useful next step in research. A relatively small number of the papers had undertaken carefully controlled economic evaluation.

Cost effectiveness and cost benefit studies are therefore carried out much more frequently than cost utility studies, which probably reflect the increased difficulty and time consuming nature of cost utility type studies. However, the cost utility method would be particularly useful in the field of dentistry because treatments frequently produce improvements in quality of life. In addition, QALY based investigations in dentistry would also allow some method of comparing dental interventions with other forms of medicine.

Cost effectiveness and cost benefit studies have focused largely on comparison of restorative materials and cost implications of fluoride, fissure sealants and caries prevention[11]. Recent years have also seen a number of papers undertaking economic analysis of implants.

The following examples of economic evaluation in dentistry have been selected to illustrate the issues described in the previous sections. It is not intended to be an exhaustive list, good example of clinical trials and economic evaluation being undertaken concurrently is that by Severens *et al.*(1998) who assessed the short-term cost effectiveness of pre-surgical orthopaedics in babies with a complete unilateral cleft of the lip and palate. There was a significant difference in both medical and indirect costs for the two groups with the pre-surgical orthopaedic group being higher. However, there was no significant difference in outcome (which was assessed in terms of operating time) between the two groups. Thus concluding that pre-surgical

orthopaedics was not cost-effective in terms of reduced operating time[12]. Obviously, other important outcome measures such as appearance and function must be assessed but these were not reported in this paper.

Klock(2000) looked at CBA(Cost Benefit Analysis) and CEA(Cost Effectiveness Analysis) of a preventive programme (including oral hygiene, fluoride application and fissure sealants) and found that in spite of a reduction in caries activity, the programme was uneconomic compared with traditional dental care. In contrast, Morgan *et al.* assessed the cost-effectiveness of a preventive programme in two non-fluoridated regions of Australia and concluded that the introduction of a preventive programme was an efficient use of resources[13].

A number of cost-effectiveness studies in dentistry have looked at different restorative materials. Mjor studied the cost-effectiveness of restorative materials for two and three surface restorations undertaken in Norway and found amalgam to be the most cost-effective, followed by composite and then gold[14]. A similar analysis of cost-effectiveness in the UK also found amalgam to be the most cost-effective material. It was proposed that the cost-effectiveness of composites in particular was lower due to the shorter longevity and the higher cost of these restorations[8]. A recent paper reported a systematic review of intra-coronal dental restorations in terms of their longevity and cost-effectiveness. It was noted that of the 30 economic studies identified, the majority were generally of poor quality, and the paper called for improved research in this area.

There are relatively few cost-utility studies in the field of dentistry. A study in 1992 by Fyffe and Kay assessed the average utility values for four different 'tooth states' which it was hypothesised would have different values[15]. They found that the highest mean utility values were for the restored tooth and lowest values for the decayed and painful posterior tooth. Values were obtained from both dentists and members of the general public and, perhaps not surprisingly, dentists gave higher utility values when compared with members of the general public. Downer and Moles also studied the influence of relevant factors on health gain from restorative treatment. O'Brien *et al.* undertook the only example which was found of utility analysis in orthodontics. They developed a TTO scale questionnaire using the aesthetic component of the Index of Treatment Need and found that patients seeking treatment gave lower utility values than those not wanting treatment. However, with the visual analogue scale there was no significant difference. It was proposed that this method could also be used as a method for predicting patient compliance.

In the field of oral medicine/oral pathology, Downer *et al*. used the Standard Gamble method to elicit the public's perceptions of different oral cancer states - precancer, small cancer and large cancer and found utility values of 0.92 for precancer, 0.88 for stage 1 cancer and 0.68 for stage 2 cancer. These values then allow the QALYs gained and the cost per QALY involved in the treatment of such lesions to be calculated.

CONCLUSION

A high quality economic evaluation should provide decision makers with information that is useful, relevant, and timely. In addition, evaluations should be based on rigorous analytical methods, be balanced and impartial (credible), and be transparent and accessible to the reader.

There are many situations where economic evaluations can assist decision makers: decisions by various levels of government or administrative bodies (e.g., regional health authorities, hospitals, drug plans) to fund a program, service or technology; pricing decisions by government regulators and technology manufacturers; clinical practice guidelines ; priorities for research funding by governments and research-based firms; post-marketing surveillance and updates of economic information based on the use of the technology in the “real world” (which can then be used to inform one of the other types of decisions).

Economic evaluations can provide “value-for money” information to those making decisions about the allocation of limited health care resources. In particular, economic evaluations can be used to identify interventions that are worth providing and those that are not. Furthermore, evaluations can be used with other approaches to help set priorities, such as program-budgeting marginal-analysis.

Evaluations do not assess all the economic implications of a technology, in particular, the financial consequences of decisions. Budget impact analysis provides complementary information on budgetary expenditure and affordability issues. Although some data requirements and analytical methods are common to both types of analyses, there are

key differences between the two, including the decision maker question that they address.

Economic evaluations generally do not distinguish between financial costs and economic (opportunity) costs, which can differ in some situations. Consequently, a reference to "cost savings" in evaluations generally indicates the value of resources freed up (e.g., release of hospital beds), which may not translate into actual financial savings.

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